

As the Commission already has found, small independent ILECs possess incentives and abilities to engage in anticompetitive conduct.¹⁰¹ Their market power arises from their control over bottleneck telecommunications facilities. In addition, as has been demonstrated above, application of § 251(c) by no means precludes profitable deployment of advanced services.¹⁰²

Most telling in the small ILEC comments, however, is the acknowledgment that “most rural incumbent LECs are presently exempt from the unbundling requirements of section 251(c),” pursuant to § 251(f).¹⁰³ The procedures under the Act for small ILECs to seek protection from § 251(c), therefore, are working, and the Commission should not impose weakened separation requirements on the advanced services affiliates for those ILECs that do not qualify for relief under § 251(f).

III. THE COMMISSION SHOULD PROMULGATE NATIONAL LOOP AND OSS RULES THAT PROMOTE THE AVAILABILITY OF ADVANCED SERVICES.

Virtually all commenters agree that nondiscriminatory access to local loops is essential.¹⁰⁴ That is because “[i]n order for CLECs to provide any telecommunications service,

¹⁰¹ Second Report and Order, Regulatory Treatment of LEC Provision of Interexchange Services Originating in the LEC’s Local Exchange Area and Policy and Rules Concerning the Interstate, Interexchange Marketplace, 12 FCC Rcd 15756 ¶¶ 159-61 (released April 18, 1997).

¹⁰² See *supra* n.22.

¹⁰³ NTCA, p. 4.

¹⁰⁴ See, e.g., TNS, p. 7; xDSL Networks, p. 4; RCN, p. 15; CTSI, p. 10; ITA, pp. 17-18; e.spire, p. 39; Qwest, p. 63; California, pp. 1-2; IAC, p. 20; TRA, p. 42; AT&T, p. 39.

advanced or basic, CLECs must have access to the monopolist's bottleneck local loop."¹⁰⁵ Nondiscriminatory access is not available today. To the contrary, incumbents continue to use their control of bottleneck facilities to discriminate against competitors and to thwart competition. For example, incumbents "frequently claim that conditioned loops are unavailable or that technical constraints prevent them from meeting the customer's transmission specifications, even when the RBOC or its affiliate is advertising the availability of ISDN or xDSL service in the same market."¹⁰⁶

The "adoption of uniform [loop] standards would further encourage the deployment of advanced services by increasing predictability and certainty."¹⁰⁷ In this regard, what GTE (p. 11) characterizes as "proposals to expand ILEC unbundling obligations" are, in fact, straightforward applications of the Act's requirements and the Commission's existing rules. Absent express clarification to this effect by the Commission, however, GTE and other incumbents will – in pursuit of delay – challenge the unbundling of facilities used to provide advanced services before every state commission. As MCI WorldCom (p. 71) properly

¹⁰⁵ Network Plus, p. 10.

¹⁰⁶ Level 3, p. 15 (emphasis in original); see also MCI WorldCom, p. 79 ("In the absence of national rules governing the treatment of DLC loops, ILECs have successfully prevented competitors from obtaining access to DLC loops at any technically feasible point").

¹⁰⁷ CTSI, p. 10; see also TNS, p. 7; KMC, p. 19; MCI WorldCom, pp. 62-63; Paging Network, p. 15; RCN, p. 15; CTSI, p. 10; Sprint, p. 19; PSINet, p. 2; CWI, p. 13; Allegiance, p. 7; e.spire, p. 33; Transwire, pp. 33-34; ICG, pp. 27-28; Illinois, p. 13 (as a minimum); Qwest, p. 58; US Xchange, LLC, p. 9; McLeod USA, pp. 8-9; TRA, p. 42; Intermedia, p. 45; ALTS, p. 56; accord IAC, p. 19.

concludes: “it is now more important than ever to adopt and enforce national rules to ensure that ILECs provide nondiscriminatory access to this critical bottleneck element of their networks.”¹⁰⁸

A. It Is Technically Feasible For ILECs To Unbundle Basic Loops, xDSL Capable Loops, And xDSL Equipped Loops.

As AT&T explained in its opening comments, the Commission should define three additional loop types: the basic loop, the xDSL capable loop, and the xDSL equipped loop. Each of these definitions is consistent with the Commission’s current local loop definition, but collectively they include the additional flexibility necessary to encompass loops supporting advanced services.¹⁰⁹ It is increasingly the case, for example, that a local loop does not terminate on the main distribution frame in a central office. AT&T’s proposed definitions account for the fact that a loop supporting advanced services splits the communications into separate data and voice streams, where each stream terminates individually in an entrant’s collocation space, at another unbundled network element, or on the incumbent’s network.¹¹⁰ MCI WorldCom and

¹⁰⁸ With the exception of some ILECs, the commenters also widely agree that the Commission should adopt standards for electrical equipment placed on the central office side of the local loop. See, e.g., KMC, p. 21; SBC, p. 42; Sprint, p. 26; PSINet, p. 10; Allegiance, p. 9; SBA, pp. 9-10; e.spire, p. 37; Transwire, pp. 36-37; ICG, p. 31; Qwest, p. 62; UTC, p. 37; Supra, p. 16; ALTS, p. 62; accord Paradyne, p. 52.

¹⁰⁹ AT&T, pp. 46-50.

¹¹⁰ Id., n.87; see also Local Competition Order ¶ 297 (“we will treat local loops with a particular type of conditioning as distinct elements that are different from loops with other types of conditioning”).

ALTS provide similar local loop descriptions,¹¹¹ and virtually all commenters support the availability of basic and xDSL capable loops.¹¹²

AT&T also demonstrated (pp. 51-53) that generally accepted industry standards support rebuttable presumptions that loops of particular lengths can support advanced services at specified data transmission speeds. The Commission should, for example, establish the rebuttable presumptions that capable loops will support the advanced services and transmission speeds AT&T identified in its initial comments.¹¹³ Incumbents offer no specific evidence of technical feasibility, but attempt to shift the burden of proving feasibility to entrants.¹¹⁴ But both the relevant facilities and the relevant information are in the hands of the incumbents, and thus incumbents should have the burden to point to industry spectrum management standards (or other industry accepted factors) that prevent a requested loop from achieving minimum performance levels. Shifting that burden and requiring entrants, on a loop-by-loop basis, to

¹¹¹ See MCI WorldCom, p. 82 (an xDSL equipped loop is “an element that includes the copper, the fiber and the electronics that make it possible for the loop to provide broadband services.”); ALTS (Attachment – “Economics and Technology of Broadband Deployment,” pp. 86-87).

¹¹² See, e.g., KMC, p. 19; IAC, p. 20; MCI WorldCom, pp. 71-72; Network Plus, p. 10; TEC, pp. 7-8; GTE, p. 102; RCN, p. 16; Sprint, p. 23; PSINet, p. 9; Allegiance, p. 7; e.spire, p. 33; Qwest, p. 64; Ad Hoc, p. 26; xDSL Networks, pp. 6-7; Intermedia, p. 46; ALTS (Attachment – “Economics and Technology of Broadband Deployment,” p. 86).

¹¹³ See AT&T, p. 52.

¹¹⁴ See, e.g., Bell Atlantic, p. 47 (“Conditioning a loop for one advanced service does not necessarily mean that the loop will support other advanced services.”); BellSouth, p. 48 (“the Commission should not presume that the inability of a competitor to provide DSL service over a loop is the result of discriminatory access on the part of the ILEC.”)

demonstrate that a requested loop can support an advanced service and minimum transmission speed that the industry has already concluded can be supported over a loop of that type would create unnecessary cost and delay. It would also legitimize incumbents' use of spectrum management as a strategic weapon to deter competition.

Presuming technical feasibility, in contrast, places no additional burden on incumbents who are truly acting in a nondiscriminatory fashion. Whenever any party – entrant or incumbent – wishes to provide an advanced service to a particular customer, the incumbent must evaluate the requested loop's capabilities to support the desired service (unless it has already been pre-qualified). Placing the burden of proof on the incumbent simply requires the incumbent to show a requesting carrier when and how the intended use of the loop violates accepted industry standards or violates published nondiscriminatory administrative practices for loop assignment within a cable.

Lacking any technical or economic basis to object to the provision of xDSL capable and equipped loops, the incumbents seek refuge in legal constructs. Thus, incumbents contend that (i) any requirements that they condition basic loops to support advanced services constitute “superior” access in violation of the Iowa Utilities Board decision,¹¹⁵ and transform

¹¹⁵ See, e.g., Bell Atlantic, p. 45 (“The Commission already has found that conditioning local loops to enable competitors to offer advanced digital services constitutes the provision of ‘higher-quality’ access to network elements than provision of non-conditioned loops.”) (citing Local Competition Order ¶ 314 and n.680).

incumbents into construction companies;¹¹⁶ (ii) any requirements that they unbundle xDSL equipped loops require them to provide a prohibited network element combination. The Commission should reject these arguments.

The Commission has already found that loop conditioning (which involves removing all passive or active electronics such as bridge taps, low pass filters, and range extenders) constitutes a “modification” necessary for incumbents to meet their obligations to provide nondiscriminatory access.¹¹⁷ Indeed, there is no dispute that without such conditioning, CLECs could not provide advanced services. Hence, as Ameritech (pp. 11-12) concedes, an incumbent “is required to make reasonable modifications to its existing facilities, such as conditioning, to the extent necessary to accommodate interconnection or access to network elements.”¹¹⁸

¹¹⁶ See, e.g., Bell Atlantic, p. 47 (“Turning every incumbent local exchange carrier into a construction company for its competitors would undermine the incumbent’s ability to operate efficiently”).

¹¹⁷ See Local Competition Order ¶ 382; NPRM ¶ 152. Many commenters also support the Commission’s decision to require ILEC loop conditioning. See TNS, p. 9; KMC, p. 19; Network Plus, p. 10; RCN, p. 16; CTSI, p. 10; Sprint, p. 23; PSINet, p. 9; Allegiance, p. 7; e.spire, p. 33; Ad Hoc, p. 26; xDSL Networks, pp. 6-7; McLeodUSA, p. 9; Intermedia, p. 55.

¹¹⁸ See also GTE, p. iv (“GTE voluntarily would make xDSL-conditioned loops available upon request where technically feasible, even in areas where neither its ILECs nor advanced services affiliate provides advanced services, if it fully recovers its costs.”); Ameritech, p. 11 (Ameritech provides ADSL and HDSL conditioned loops).

Indeed, this conclusion, which survived review by the Eighth Circuit,¹¹⁹ is particularly appropriate in the context of advanced services – conditioning a loop to provide advanced services simply facilitates use of a loop’s existing features, functions, and capabilities. A plain copper loop is inherently capable of supporting both narrowband and broadband services. Only resistance and spectrum management concerns should properly limit the uses to which that loop can be put. Consequently, in those instances where the incumbent has placed equipment such as load coils and bridge taps on a copper loop, it has, for its own benefit, augmented one loop capability (voiceband traffic) at the expense of other existing capabilities (broadband channels). Requiring the incumbent to remove equipment or electronics that inhibit data transmission, then, simply gives effect to the Commission’s previous finding that the ILEC is required to make all features, functions, and capabilities of the loop available to CLECs, rather than limiting the features, functions, and capabilities of the loop to those that the incumbent LEC has chosen to use.¹²⁰

¹¹⁹ See Iowa Utils. Bd. v. FCC, 120 F.3d at 813, n.33 (“we endorse the Commission’s statement that ‘the obligations imposed by sections 251(c)(2) and 251(c)(3) include modifications to incumbent LEC facilities to the extent necessary to accommodate interconnection or access to network elements. . . . The petitioners themselves appear to acknowledge that the Act requires some modification of their facilities.’”) (citations omitted).

¹²⁰ Local Competition Order ¶ 260; see also Opposition to AT&T Corp. to the Petitions of Bell Atlantic Corporation and SBC Communications, Inc. for Reconsideration, Deployment of Wireline Service Offering Advanced Telecommunications Capability, CC Docket Nos. 98-147, et al., p. 2 (filed October 5, 1998). The Commission should also take the opportunity afforded by this proceeding to clarify that loop conditioning costs should be amortized over the life of the loop. Forcing the first CLEC who leases a loop to provide an advanced service to a particular customer to bear all conditioning costs in

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Nor does an xDSL equipped loop constitute a combination of network elements in violation of Iowa Utils. Bd. As AT&T (pp. 46-47) explained in its comments, the Commission repeatedly has concluded that equipment placed on the loop to facilitate transmission is part of the loop and, if the incumbent has placed such equipment on the loop, the entrant can obtain it as part of the loop.¹²¹ DSLAM-type equipment, whether installed in a central office or in a remote terminal, is transmission-enhancing equipment and, when employed, is part of the loop element. The DSLAM functionality (whether provided as a stand alone unit or as plug-in electronics) allows the loop to support greater bandwidth over a longer distance. In this respect, it is no different than load coils that support higher quality voice-grade traffic over longer loops or DLC or other multiplexing equipment that allows greater concentration of loop traffic between a remote terminal and a central office. Indeed, like multiplexers or DLC equipment, DSLAM-type equipment (which performs multiplexing and modulation functions) can be deployed at a remote terminal in the “middle” of the loop.

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the first year would not only raise entry costs, but also allow subsequent carriers – including the incumbent – to serve that customer without incurring loop conditioning costs. A competitively neutral and nondiscriminatory cost recovery scheme would amortize conditioning costs across the life of the loop so that all carriers who benefit from the conditioning contribute to the conditioning costs.

¹²¹ See, e.g., id., ¶ 391 (rejecting defining a concentrator as a subloop element and instead treating it as part of the loop); id., ¶ 383 (discussing loops that contain IDLC equipment).

In sum, the Commission should require incumbents to unbundle basic, xDSL capable, and xDSL equipped loops and to condition loops where necessary to support advanced services. The Commission should also adopt the presumptions proposed by AT&T in its initial comments.¹²² Finally, in order to prevent delay in the provisioning of xDSL capable loops, the Commission should clarify that an xDSL capable loop includes spare loops or loops that are currently not being used to provide service.¹²³ At least in the near term, AT&T understands that incumbents often will provide xDSL service over spare loops. Consistent with the Act's nondiscrimination requirement, the Commission therefore should prohibit incumbents from refusing entrant requests for access to spare copper pairs. This refusal can take the form of an outright refusal or a subtler but equally effective tactic of requiring use of a Bona Fide Request and the subsequent pricing of the loop based upon new construction costs. Neither approach should be tolerated as each effectively precludes entrants from providing service.

¹²² See AT&T, pp. 52-54.

¹²³ AT&T also agrees with those commenters who have asked the Commission to declare that dark fiber is a network element. Every federal district court to decide this issue has concluded that dark fiber is a network element under the Act and must be unbundled. See, e.g., MCI Telecomms. Corp. v. BellSouth Telecomms. Inc., 7 F. Supp. 2d. 674, 677 (E.D.N.C., 1998); Southwestern Bell Tel. Co. v. AT&T Communications Inc., No. A-97-CA-132-SS, p. 10 (W.D. Tex. Aug 31, 1998). The Commission can reduce further ILEC delay by establishing a nationwide loop rule requiring ILECs to unbundle dark fiber.

B. The Comments Confirm The Importance Of Preventing Incumbent LEC's From Using DLC Or Other Remote Terminal Configurations To Undermine Loop Unbundling Or Access To Network Elements.

Many commenters identify logistical and technological that limit the ways that loops passing through remote terminals can be unbundled. At the same time, the comments clearly demonstrate that unbundling of these loops is virtually always possible through one or more of the methods discussed in this section. Just as importantly, the problems identified by the commenters stem from limitations in the incumbents' legacy networks. Most of these problems should be eliminated on a going-forward basis. Consequently, the Commission should implement regulations that not only promote nondiscriminatory access to remote terminal space as well as loops passing through those facilities, but also expand the opportunities for entrants in the future to deploy advanced services equipment in ILECs' new remote terminals and to access unbundled loops at those points.

The importance of such procompetitive measures cannot be overstated. The comments submitted in this proceeding strongly indicate that remote terminal and DLC loop configurations will become increasingly prevalent, especially for rural customers.¹²⁴ By moving advanced services equipment such as DSLAMs closer to the customer, a carrier can vastly increase transmission speeds. Hence, an ILEC could soon offer, for example, full video services by placing DSLAMs in remote terminals located 3,000 feet or less from customers' premises. If entrants cannot place similar facilities in the ILEC's remote terminals, then the entrants almost

¹²⁴ See, e.g., BellSouth, p. 26 ("BellSouth and other ILECs continue to place fiber deeper into their networks").

certainly will be precluded from offering competitive advanced services, a preclusion that could easily spill over into their competitiveness for traditional local and other services.

The need for Commission intervention is also clear. The comments confirm that incumbents will abuse remote terminal configurations to inhibit competition by “hiding” local loops absent regulatory protection. For example, ALTS (p. 64) notes that incumbents could “siz[e] [their remote terminals], and their associated power and environmental controls, in such a way as to effectively preclude access by multiple carriers.” But anticompetitive conduct need not be so subtle. GTE (p. 93), for example, continues to insist that DLC configured loops cannot be unbundled for voice or data services even though the Commission found otherwise over two years ago.¹²⁵ As discussed *infra*, however, nondiscriminatory access to loops passing through remote terminals is technically feasible and, if the Commission adopts the rules proposed by AT&T and other commenters, ILECs will have greater incentives going forward to build remote terminals, configure their loops, and deploy new DLC technologies in such a manner that today’s problems will be largely eliminated tomorrow. The Commission, then, should seize the opportunity afforded by this proceeding to transform a potentially devastating barrier to competition for advanced services and possibly local competition in general into a short-term problem that will have a relatively small impact on customer choice and rates in the future. At a minimum, the Commission should take aggressive steps to, “ensure that any advanced services

¹²⁵ Local Competition Order ¶ 382.

loop provided through DLC technology in remote terminals or customer premises locations is available to competitors as an unbundled element, including all electronics.”¹²⁶

Incumbent attempts to restrict entrant access to remote terminal configured loops fall into two basic categories. First, they insist that it is not technically feasible to offer xDSL services over IDLC configured loops. Second, some incumbents claim that access to unbundled loops at remote terminals is not feasible. Neither claim is supportable.

IDLC configured loops. It is plainly possible to groom IDLC loops so that they can support xDSL services. AT&T (pp. 68-69) identified several feasible methods that were echoed by other commenters, including at least one incumbent.¹²⁷ It is also possible that, in the future, new DLC technology may support xDSL services.¹²⁸ At this time, then, the Commission

¹²⁶ Qwest, p. 68.

¹²⁷ See, e.g., Ameritech, pp. 14-15 (“If no suitable spare copper facilities are available, Ameritech searches to see if there are existing customers served by copper facilities in the same area that can be transferred to the DLC system. If such copper facilities can be reasonably made available and re-arranged to meet the CLEC’s request, Ameritech offers to use those copper facilities. Again, the CLEC is advised of the need to re-arrange facilities and the associated costs, and given the opportunity to accept or cancel the order.”); *id.*, p. 15 (“Where feasible, Ameritech already provisions requests for xDSL-compatible loops, where a compatible loop is not currently available, by assembling spare existing copper components into a compatible loops.”); Sprint, pp. 28-30; KMC, p. 19; MCI WorldCom, p. 71; Network Plus, p. 11; ICG, pp. 32-33; Northpoint, p. 20; Illinois, pp. 15-16; Intermedia, p. 57; ALTS, p. 62; *accord* xDSL Networks, pp. 6-7; IAC, p. 19; Rhythms, p. 7; Cincinnati Bell, p. 35; Intermedia, p. 47; e.spire, pp. 44-45; Paradyne, p. 9.

¹²⁸ See, e.g., xDSL Networks, p. 8 (“One possible solution to the ‘technical feasibility’ or space concerns would be to require those ILECs raising these concerns to replace these DLCs with xDSL-compatible third-generation DLCs and offer their capabilities to competitors.”); AT&T, p. 69, n.125.

should require loop unbundling when a DLC or other remote terminal configuration is involved through one of three methods: (i) unbundling an xDSL capable “home run” copper loop (provided equivalent bandwidth capability is delivered); (ii) unbundling an xDSL equipped loop; or (iii) unbundling a basic loop.¹²⁹ The Commission can expand this list of required methods as the relevant technology evolves. Further, the Commission should establish a presumption that all new ILEC loop deployments and reconfigurations following the promulgation of the Commission’s rules in this proceeding can support xDSL capable loop unbundling. If not, then the loop facilities must be reconfigured at the ILEC’s expense so that entrants can lease an unbundled xDSL capable loop that supports the same transmission speeds and service quality achievable by the ILEC. This presumption will create a strong disincentive for ILECs to hide loops in DLC type configurations.

GTE contends that “[w]hile the 1996 Act requires ILECs to unbundle at any ‘technically feasible’ point, it does not require ILECs to use any technically feasible method. As long as the unbundled DLC-loop has all of the features, functions, and capabilities to allow the provision of advanced services, there is no reason to allow the CLEC to dictate the method of unbundling.”¹³⁰ GTE’s argument ignores, however, the critical role that loop characteristics play

¹²⁹ See AT&T, pp. 68-69. ILECs should be required to offer unbundled “home run” loop at a reasonable price. AT&T has encountered situations in which ILECs “offer” home run loops but only if AT&T is willing to thousands of dollars in “special construction” charges to build the loop, making the facility effectively unavailable.

¹³⁰ GTE, p. 95 (emphasis in original).

with respect to data services. While it may be acceptable for an entrant, when providing voice-grade service, to obtain an 18,000 foot loop instead of the DLC loop GTE uses, the same would not be true in the case of ADSL service. If the copper loop distribution segment of the DLC loop is only 3,000 feet long, then GTE may be able to provide data services at transmission rates sixteen times as fast as those the entrant could achieve on the 18,000 foot loop. Simply put, the method of unbundling can be just as important to achieving the Act's nondiscriminatory access requirement as the point of access. In addition, both the Commission and the Eighth Circuit already have properly held that an incumbent must take whatever steps are necessary to meet its statutory obligation to provide nondiscriminatory access to network elements, even if that requires modifications to existing facilities.¹³¹ Hence, the Commission should either permit the entrant to choose the method of unbundling or, at a minimum, require the incumbent to unbundle using a method that can support the same service quality that the incumbent's own loop can achieve.

In addition, due to space and technical limitations in currently deployed remote terminals, there may arise circumstances where the ILEC (or its separate affiliate) is capable of making available DSLAM-type functionality for a particular customer, but a CLEC is not. For example, space exhaustion in a remote terminal or central office might make it impossible for a CLEC to collocate a DSLAM, but the ILEC (or its affiliate) may already have a DSLAM with

¹³¹ See Iowa Utils. Bd. v. FCC, 120 F.3d at 813, n.33.

spare or expandable capacity deployed in that location. Similarly, in the near future an ILEC may have DLC equipment that accommodates line cards supporting xDSL services, but no space available in the remote terminal for DSLAM collocation. In such instances, the Commission should require the ILEC to provide the entrant an xDSL equipped loop by modifying an xDSL capable loop.¹³² Such modification does not constitute superior service because, among other things, it is the same service that the ILEC is providing to its own customers. In fact, if the CLEC's customer had requested the xDSL service from the ILEC instead, the ILEC would have modified an xDSL capable loop in the same manner.

In all events, the Commission should clarify that "any solution to the problem of offering xDSL services through a DLC that the ILEC uses for itself or for an affiliate must be offered to non-affiliated carriers in complete parity with respect to quality of service, provisioning intervals, and the like."¹³³ If the incumbent LEC or its affiliate is providing an advanced service over any loop passing through a remote terminal, then non-affiliates should be able to lease that loop or another loop that will support the same quality service. Any other requirement would significantly increase the advantages that ILECs already hold over their competitors.

¹³² As explained above, DSLAM-type equipment, like other multiplexing and transmission enhancing equipment, is loop equipment.

¹³³ Sprint, pp. 32-33; see also id., p. 32 ("If an ILEC or an advanced services affiliate thereof offers xDSL service through a DLC-delivered loop, the ILEC must enable an unaffiliated requesting carrier to offer the same or similar service to end users served by that DLC at parity."); e.spire, pp. 46-47; Northpoint, p. 28; ALTS, p. 65.

Access to unbundled loops at remote terminals. The Commission should also reject the incumbents' argument that access to loop elements at remote terminals is not feasible. While virtually all commenters agree that access to remote terminals is critical to competition in advanced services,¹³⁴ incumbents nevertheless insist that the lack of available space in remote terminals and various safety concerns counsel against access to loop elements at those points.¹³⁵ They do not even begin to demonstrate, however, that low-intrusion configurations such as a cross-box to cross-box interconnection arrangement present any significant space or safety concerns, nor will they be able to do so in most instances. BellSouth (p. 50) agrees that the cross-box to cross-box arrangement "allow[s] the competitor to access the unbundled network elements that it has obtained without compromising the security or integrity of its (or the ILEC's) network." Other loop access methods at remote terminals are apparently working as well given that some incumbents claim to be frequently providing entrants with such access.¹³⁶ Consequently, the Commission should confirm what many commenters have demonstrated – access to unbundled loops at remote terminals is presumptively technically feasible at least when a cross-box to cross-box arrangement is used.¹³⁷ The Commission should further clarify that

¹³⁴ See, e.g., PSINet, p. 16; Transwire, p. 38; Northpoint, p. 20; xDSL Networks, p. 8; accord TNS, p. 9; MCI WorldCom, p. 70; Allegiance, p. 9.

¹³⁵ See, e.g., Bell Atlantic, p. 51; SBC, p. 45.

¹³⁶ See, e.g., Ameritech, p. 17; BellSouth, p. 50.

¹³⁷ See, e.g., KMC, p. 22; accord RCN, p. 17; BellSouth, p. 50; xDSL Networks, p. 8; Intermedia, pp. 58-59; TNS, p. 9; MCI WorldCom, p. 70; GSA, p. 17; GTE, p. 98; PSINet, p. 15; Allegiance, p. 9; ITA, pp. iv, 19; e.spire, p. 46-47; Transwire, p. 38; CIX, (footnote continued on following page)

entrants are permitted to access unbundled loops at or near the remote terminal, through transmission media, including but not limited to fiber or copper transmission cables, and to install their own transmission enhancing equipment (such as DSLAM functionality, DLC equipment, or both).¹³⁸ And in order to facilitate these methods of access to unbundled loops, the Commission should require incumbents to obtain for entrants any access to rights-of-way or other pathways that the entrants need to perform cross-box to cross-box interconnection and similar arrangements.¹³⁹

In addition, the Commission should find that: (i) “cageless” collocation is permissible at remote terminals; (ii) the incumbent (or its separate affiliate) should be required to remove any equipment from its remote terminals that is not used or useful in order to maximize the available space; and (iii) an incumbent’s separate affiliate use of remote terminal space is limited to 25 percent of the available space or a percentage equal to that afforded other

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p. 27; Northpoint, pp. 20-21; NAS, p. 30; OpTel, pp. 4-6; US Xchange, pp. 10-11; McLeodUSA, p. 10; Supra, p. 11; Rhythms, p. 12; First Regional, p. 12; TRA, p. 44; ALTS, p. 65.

¹³⁸ In many instances, interconnection at the remote terminal using copper cables will promote more efficient use of central office and remote terminal collocation space. See AT&T, pp. 69-71.

¹³⁹ Accord RCN, p. 17 (“in the event that existing pedestals or remote terminals do not have sufficient space to accommodate all request for unbundled access, the Commission should require ILECs to construct, or allow the CLEC to construct, an adjacent remote terminal.”); CTSI, p. 11; KMC, p. 23; Allegiance, p. 10; e.spire, pp. 24-25.

requesting entrants if more than three entrants have space requests pending.¹⁴⁰ These requirements will promote nondiscriminatory access and the efficient use of remote terminal space.

Finally, when allocating remote terminal space, most commenters addressing this subject, including AT&T, support a first come, first served rule.¹⁴¹ At the same time, AT&T agrees with Sprint (pp. 33-34) that the Commission should not allow carriers to warehouse space or allow the incumbent's affiliate to be the only carrier that can use that space.¹⁴² In addition, the Commission should adopt Sprint's proposal (p. 32) that an incumbent's "[f]ailure to make reasonable provision in new [remote terminal] construction (i.e., construction begun after a final order is issued in this proceeding) for unbundled xDSL-capable loops could be deemed an unreasonable and anticompetitive practice." This treatment will further reduce the ability of incumbents in the future to hide unbundled loops through remote terminal configurations.

C. The Comments Confirm The Need For Modification Of The Commission's OSS Rules To Include Loop Characteristics And Loop Pre-Qualification Information, As Well As The Standards Used by Incumbents In Pre-Qualifying And Qualifying Loops For Advanced Services.

Virtually all commenters agree that the Commission must revise its existing OSS rules to make available to entrants on a nondiscriminatory basis any essential loop characteristic

¹⁴⁰ See AT&T, pp. 70-71.

¹⁴¹ See, e.g., SBC, p. 44; GTE, p. 100.

¹⁴² See AT&T, p. 70.

information.¹⁴³ Otherwise, incumbents will continue to use the pre-ordering, ordering, and provisioning process to discriminate against competitors, as they have in the basic local service context.¹⁴⁴ These anticompetitive practices can have even more dire consequences in the advanced services context. As AT&T pointed out in its initial comments, without nondiscriminatory access to the loop qualification information, entrants seeking to provide advanced services will be in the untenable position of having to lease a loop, subsequently determine if the loop is on DLC, ascertain if it was engineered with active or passive electronics, establish its length and resistance, test the loops capability to support an advanced service, and then – if it passes all these hurdles – subject it to potential rejection under spectrum management standards.

¹⁴³ See, e.g., RCN, p. 16 (“RCN agrees with the Commission’s tentative conclusion that, as part of the rules governing [OSS], ILECs should be required to provide CLECs on request with sufficient information about the loop to enable them to determine whether the loop is capable of supporting xDSL.”); Sprint, p. 20 (“however an ILEC chooses to offer xDSL service, it must provide the same type of information about the loop to unaffiliated carriers as its own internal personnel or affiliates have access to, and within the same time frames.”); U S WEST, p. 45 (U S WEST has loop qualification information “available as a result of its own use of loops.”); Ameritech, p. 16; CTSI, p. 10; Sprint, p. 20; PSINet, p. 14; Allegiance, pp. 7-8; e.spire, p. 35; ICG, pp. 28-29; Illinois, p. 15; Qwest, p. 60; Paradyne, p. 33; Supra, pp. 8-9; TRA, p. 43; Intermedia, p. 49; ALTS, p. 59; MCI WorldCom, pp. 63-64; KMC, p. 20; IAC, p. 20; Level 3, p. 15; GSA, p. 15; MGC, p. 38.

¹⁴⁴ See, e.g., MGC, p. 37 (“The most pervasive means an ILEC has to frustrate true competition is through the loop provisioning process.”); *id.*, p. 39 (“Roughly 40% of the orders MGC submits to the GTE ordering center are copied incorrectly, which results in orders being rejected.”); *id.*, p. 44 (“GTE routinely sends invoices for local loops to its former customers, rather than sending them to MGC.”) (footnote omitted).

Indeed, even some incumbents now agree that entrants must have access to “‘loop qualification’ information – information regarding loop length, loop coils, bridge taps, decibel loss, line carriers, and the like.”¹⁴⁵ There can be little doubt, then, that the Commission should expand and clarify its OSS and other information disclosure rules to ensure that entrants have nondiscriminatory access to incumbent loop data and that pre-ordering, ordering, provisioning, maintenance, and repair are performed in the same time intervals for entrants as they are performed for incumbents and their affiliates.

Given the paucity of information voluntarily submitted by incumbents on their loop characteristic databases and outside plant engineering records, the Commission must promulgate broad generic rules aimed at achieving parity of access to this critical information. On this point, there can be little debate. Without access to the same information and the ability to use the information in the same time frame as the incumbents, entrants will be at an overwhelming competitive disadvantage.¹⁴⁶

At an absolute minimum, the Commission should promote nondiscriminatory access by requiring incumbents to disclose the five loop characteristics identified by MCI WorldCom: “(1) whether the loop passes through a remote terminal, (2) whether it includes any

¹⁴⁵ U S WEST, pp. 44-45; see also BellSouth, p. 49 (“Of course, to the extent BellSouth has compiled such information, it will be made available to competitors upon request.”); U S WEST, p. 45 (the Commission’s rules require ILECs to “make available to competitors the information it compiles in conducting its own operations.”).

¹⁴⁶ See Cincinnati Bell, p. 36 (“it is appropriate and within the spirit of the act to provide the same interval to a competitor that it would provide for itself for a similar loop”).

attached electronics, (3) the condition and location of the loop, (4) loop length, and (5) the electrical parameters of the loop.”¹⁴⁷ This information is needed for an entrant to ascertain whether a loop will support a particular advanced service and what additional electronics such as a DSLAM need to be deployed.¹⁴⁸ The Commission could better promote advanced services, however, by requiring the ILECs to provide data that will allow CLECs to answer the following questions.

- Is there a digital loop carrier present anywhere between the customer’s premises and the collocation point where the CLEC interconnects with the loop? If so, what type of DLC is present? Certain types of DLC currently may not support xDSL service thereby requiring grooming or the leasing of an xDSL equipped loop. Other types of DLC may require additional or new electronics.
- Are there any intervening active or passive electronics on the loop such as range extenders, low pass filters, or load coils? These types of intervening electronics will require loop conditioning because they impede xDSL services by filtering out the high bandwidth signals.
- Are there bridge taps on the loop? If so, what are the locations, length and gauge of each? A bridge tap is any branch or extension of a cable pair beyond the point where it is used and in which no direct current flows when CPE is connected to the pair in use. If the loop has one or more bridge taps extending beyond the customer’s point of termination, those bridge taps must also be identified as well as those exiting between the customer and the central office.
- What are the working and total lengths of the loop? How many feet of each wire gauge make up the length of the working loop? The working

¹⁴⁷ Accord AT&T, pp. 54-57.

¹⁴⁸ ILEC claims that they do not have this information should be disregarded. This basic information should be contained in their outside plant engineering plans. If an ILEC has not maintained such records, then they should be required to remedy this gross mismanagement of their outside plant by collecting the information without delay.

length is the sum of all cable segments from the central office to the customer's point of termination (e.g., the NID). The total length is the sum of all cable segments, including bridge taps. Thus, the total length will equal or exceed the working loop length. The lengths of the loop segments and the wire gauge of each segment will affect the degree of signal attenuation and therefore the advanced services types and transmission speeds the loop can support. Determining whether or not total length exceeds the working length is especially important because it indicates the presence of bridge taps that may extend, for example, beyond a customer's premise.

- What is the total loop resistance measured in ohms? Loop resistance is one of the most important factors in determining the amount of signal attenuation that will occur for a particular advance service.
- What is the loop's overall quality of the loop? To the extent that the ILEC keeps records that permit evaluation of loop quality, the ILECs should provide that information to CLECs. This data include any overall quality indicator that may be retained with the loop record, even if it is subjective in nature. Likewise any baseline test results recorded for the loop and any history of trouble tickets logged for the loop should be disclosed.
- How many "disturbers" based on the list in T1.413 Issue 2 are present within the same binder group in which the loop is located and what is the nature of each disturber? How many "disturbers" based upon the list in T1.41.3 Issue 2 are present within the same cable and what is the nature of each? A disturber is any service that the T1 standard identifies as having the potential to generate inter-service inference. T1.413 Issue 2 is the national standard (ANSI), issued by the T1 E1.4 subcommittee of ATIS, which governs operating parameters of xDSL services. A binder group typically is a set of 50 twisted copper pairs bound together within a cable as a distinct subgroup. ILECs should inform CLECs about the proximity of disturbers as they are a potential source of interference that, in turn, may degrade maximum throughput and overall service performance.
- What loop design strategy was used for the loop? The ILEC may have employed one of a number of design strategies for the local loop that may influence the minimum transmission performance. These strategies include Resistance Design ("RD"), Long-Route Design ("LRD"), and Unigauge ("UG"), which were largely employed prior to 1980, as well as Revised Resistance Design ("RRD"), Modified Long-Route Design ("MLRD") and Concentrated Range Extender with Gain ("CREG"), which have been used since 1980. RDD most likely will be the predominant design criteria.

Of course, the availability of this information does not guarantee that a unbundled loop will support the intended advanced service. The information only increases the probability of successful deployment. Without answers to these questions, however, CLECs will be forced to undertake an even more uncertain trial and error process that will undoubtedly produce unnecessary expense and delay. In addition, the Commission should further reduce the uncertainty of the pre-ordering process by requiring the ILEC to perform a pre-service loop test and provide the results to the CLEC in order to establish that the loop will perform as expected. In light of ILEC claims that their loop plant records are unreliable,¹⁴⁹ pre-service testing is a necessary prerequisite for advanced service deployment whether by the incumbent or the entrant.

With respect to its resold services, entrants will need additional information. According to U S WEST (p. 45), that information includes “which advanced services it offers, the offices in which these services are available, the equipment located in such offices, whether a customer qualifies for a particular service in light of considerations such as loop length, and any other information it compiles in the process of serving its own DSL customers.”¹⁵⁰ Hence, the Commission should require ILECs to provide this information through OSS.

¹⁴⁹ See, e.g., GTE, pp. 82-83; Ameritech, pp. 16-17 (Its loop database contains only “partial and dynamic information” and therefore “would mislead CLECs”).

¹⁵⁰ It is clear that incumbents have access to a growing body of loop information. See, e.g., Level 3, p. 15 (“Indeed, since most major ILECs are deploying or planning to deploy their own xDSL services, they will need to collect this information for themselves”). Hence, the Commission should revisit its loop characteristics disclosure rules in a future proceeding to re-evaluate what information incumbents possess and should be required to disclose.

As always, nondiscrimination is the governing standard. Thus, GTE's claim (p. 83) that it "requires a prior physical evaluation of any loop, both for its own advanced services and those of any CLEC purchasing the loop as a UNE" would be acceptable so long as the physical evaluations are conducted on a nondiscriminatory basis as to timeliness, accuracy, and completeness.¹⁵¹ If GTE, however, has conducted an advanced survey of the loops located in areas where it intends to offer advanced services, it cannot require an additional physical inspection of candidate loops when a CLEC requests an xDSL capable or equipped loop, unless GTE requires an identical additional inspection for itself or its affiliate at the time a customer orders service.¹⁵²

The Commission should also require incumbents to capture and disclose comparative performance measurement results related to pre-ordering, ordering, provisioning, maintenance and repair, and billing support for xDSL capable and equipped loops by loop type,

¹⁵¹ See also Ameritech, p. 16 ("Ameritech does not provide direct access to its loop inventory database to its own data subsidiary or to CLECs. All loop requests, including those for ADSL-compatible and HDSL-compatible loops, are handled in the same manner").

¹⁵² U S WEST (p. 46) argues that "incumbents need only provide loop qualification information for individual loops, rather than in aggregate form (by wire center, for example)." If the Commission decides to limit entrant access to aggregate loop information, it should clarify that an incumbent cannot use the absence of an aggregate loop disclosure requirement to justify discriminatory tactics or delay in the pre-ordering, ordering, or provisioning processes. Thus, if an entrant wants to provide a particular advanced service to given customer, the incumbent must identify the loop that can support that service at the highest quality. If there is any question regarding which loop would be most desirable to the entrant, the incumbent must identify the available alternatives with all relevant loop qualification information.

in addition to reporting on such performance for basic loops. While some incumbents contend that the Commission should rely on negotiation and arbitration to establish time intervals,¹⁵³ entrants have already found that those procedures can result in significant cost and delays. As MGC (p. 37) explains: “delays, failures, deliberate mischief, and arbitrary system complexity by ILECs, individually and collectively, drive up the costs incurred by CLECs, forcing carriers like MGC to dedicate substantial resources to doing nothing more than policing ILEC performance.” The Commission must also discourage incumbent practices designed to prevent meaningful performance comparisons. For example, Ameritech (p. 17) seeks to limit direct entrant access to its loop databases with the specious argument that such access “would mislead CLECs by leaving the false impression that xDSL-compatible loops are not available at a location, where Ameritech may in fact be able to provide one.” Access to incumbent database information, even imperfect information, can only help entrants (and is, in any event, mandated by the nondiscrimination requirement). As Ameritech is undoubtedly aware, direct entrant access to loop databases will play an important role in helping entrants detect discriminatory loop assignment, pre-ordering, ordering and provisioning of basic, xDSL capable, and xDSL equipped loops.

¹⁵³ See, e.g., GTE, p. 97 (“GTE opposes the adoption of any prescribed standard intervals. . . . Thus, rather than mandating uniform intervals, the Commission should leave such standards to voluntary, private negotiations backed up by state mediation or arbitration, as Congress intended”).

Of course, when an incumbent provides a loop that does not perform as promised (or at the minimum industry standard levels), it must rectify the situation by repairing the loop or finding an alternative loop that will support the same quality of service in the same amount of time the ILEC provides this service to itself or its affiliate. Finally, the Commission should impose substantial penalties on incumbents who do not perform the aforementioned functions in a nondiscriminatory fashion.¹⁵⁴

D. Industry Forums And Not Unilateral Incumbent Action Should Establish Loop Spectrum Management Standards.

Spectrum management is “an area ripe for ILEC discrimination in favor of any affiliate,”¹⁵⁵ and, in fact, incumbents have routinely used “spectrum management” to justify discriminatory treatment of their potential competitors.¹⁵⁶ “Too often, spectral compatibility concerns are raised simply as a means to thwart competition; many proposed signal power standards serve only to advantage or disadvantage particular technologies and competitors.”¹⁵⁷

¹⁵⁴ See, e.g., MGC, p. 45 (There should be substantial penalties for failure to provide OSS in a nondiscriminatory fashion.); AT&T, p. 53. As AT&T pointed out in its comments (pp. 56-57, n.102), ILECs cannot be relied on to collect performance data voluntarily. Indeed, Pacific Bell was recently fined \$309,000 – \$3,000 per day for 103 days – by the California Public Utilities Commission for failing to provide survey data about the quality of its residential and ISDN data-transmission services. See News Release, “CPUC Fines Pacific Bell For Holding Back Data on Poor ISDN Service Quality” (Cal. PUC, released September 17, 1998).

¹⁵⁵ Qwest, p. 61.

¹⁵⁶ See, e.g., MCI WorldCom, p. 65; Level 3, p. 14; Paradyne, p. 3.

¹⁵⁷ Paradyne, p. 3.